### **Common Sense Initiative, Automobile Manufacturing Sector**

U.S. Automobile Assembly Plants and Their Communities: Environmental Economic, and Demographic Profile

# Part III: Automobile/Light Duty Truck Assembly Plant-Community Profiles

55. Ford Motor Co. Norfolk, VA

December 1997

#### **Contents and Guidelines for Use**

Users of this profile should carefully review the description of methods, data limitations, and guidelines for use and interpretation of the data presented in Part I of the report.

#### **Contents:**

Plant Locations (National and Michigan maps)

Plant Location, Database Identification Numbers, 1994 Production and Employment

1991 and 1993 RCRA Biennial Report Summary

1991-1994 TRI Releases and Transfers Summary

1994 TRI Releases and Transfers by Chemical

1991-1994 Volatile Organic Compound and Nitrogen Oxide Emissions

1994 Summary of TRI Chemical Releases and Transfers from Sources within 3 Miles of Assembly Plant

Air Quality Attainment Status for Criteria Pollutants (as of 1994)

Community Demographic and Economic Characteristics

Facility Location (map)

Area Wide 1994 TRI Emission Profile (map)

1994 TRI Releases and Transfers from Sources within 3 Miles of Assembly Plant, by Chemical

Demographic Characteristics (maps)

#### **General Guidelines for Use**

Efforts have been made to ensure that the data presented here are accurate. The Project Team could not independently verify data accuracy in all cases, however, and some errors may remain. The following is a partial list of factors that should be considered in using these profiles:

- 1. Current releases presented in this report represent only some of the contamination sources in a given area. Data on historical releases (prior to 1991) were not included, and releases from non-assembly plant emission sources were identified only through the Toxics Release Inventory (TRI). TRI data do not cover all sources of releases. Considering only TRI data for a given community may mis-state the relative contribution of plants and their neighboring TRI facilities to an area's total releases.
- 2. Care must be taken to distinguish true changes over time in environmental releases from apparent changes, due, for example, to changes in the scope of reporting requirements.
- 3. TRI data are often based on engineering estimates and are reported on an annual basis. Data on releases over shorter time frames are not available.
- 4. TRI, the Biennial Report and other databases do not include all substances and environmental releases of concern.

#### **Notes on Comparisons Across Facilities**

- 1. The following factors can affect an assembly plant's environmental profile, among other things: the number of vehicles produced, plant age, process equipment age, and vehicle size and configuration.
- 2. Some plants are highly-integrated, performing some parts and all assembly steps in-house. Others obtain parts from other manufacturing facilities, or share assembly operations with another plant.
- 3. States differ in how they define hazardous waste and how they treat recycled wastes and small quantity generators. Therefore, data on quantities of BRS wastes generated may not be comparable for plants located in different states.
- 4. Area-wide averages for economic and demographic characteristics may be better or worse measures of the plant's immediate community, depending on the specific location of a plant within the reporting area.

#### **Plant-Community Profile:** Ford Motor Co. Norfolk City VA

LOCATION DESCRIPTION Address 2424 Springfield Ave., Norfolk VA 23523 Plant opened 1925;

Lat/Long: latitude (degrees N) 36 50' 0"

longitude (degrees W) 76 14' 55"

County: Norfolk City MSA:Norfolk-Va Beach-Newport News VA ID NUMBERS

Other counties within 3 miles of plant: Virginia Beach, Portsmouth, Chesapeake

**OPERATIONS** Production **Employment** 

> 117,315 Calendar Year: 1991 119,783 1992 1993 153,910

1994 181,840 1,802

TRI

Produced Ford F series pickups in 1994.

RCRA ID VAD003177391 AIRS ID AFS5171000009 NPDES ID VA0004910

23523FRDMT2424S

#### PLANT ENVIRONMENTAL PROFILE

RCRA BIENNIAL REPORT									
<b>Waste Code(s)</b> 1991	Wastewater?	Physical Form	Source	Mgd. On/Off-Site	Management Method G	Quantity Generated (tons)	Quantity Shipped (tons)	Quantity Mgd. On-Site (tons)	)
D001 (ignit) D039, D018	N	B204 org. liquids	A19 other clean/degr.	Off	M021 solvents recov.	3.2	3.2	0.0	
F002 (halog. solvents)	N	B202 org. liquids	A21 painting	Off	M023 solvents recov.	43.3	43.3	0.0	
F003, F005, D001, D006, D007	N	B203 org. liquids	A21 painting	Off	M021 solvents recov.	0.3	0.3	0.0	
F005, F002, F003 (solvents)	N	B204 org. liquids	A21 painting	Off	M051 energy recov.	83.1	83.1	0.0	
TOTAL - 1991		0 1	, ,		0,	129.9	129.9	0.0	
1993									
D001(ignitable) D039 (tetrochlethylene)	N	B204 org. liquid	A19 other clean/degr.	Off	M021 solvents recov.	4.3	4.3	0.0	
F002, F003, F005, D001, D018	N	B204 org. liquid	A21 painting	Off	M051 energy recov.	234.5	234.5	0.0	
F003 (non-halog solvents)	N	B203 org. liquid	A04 flush rinsing	Off	M022 solvents recov.	476.8	476.8	0.0	
F003, F005 (nonhalog solvents)	N	B203 org. liquid	A21 painting	Off	M021 solvents recov.	0.1	0.1	0.0	
TOTAL - 1993						715.7	715.7	0.0	
TOXICS RELEASE INVENTORY	Air-Fugitive	Air-Stack	Total	Discharge	Off-Site	Off-Site	Off-Site	Off-Site	Total
Total lbs of TRI chemicals:	Emissions	Emissions	Releases	to POTW		Recycling	Treatment		Transfers
1991	17,202	528,386	545,588	24,140	, ,	85,000	0	11,000	203,860
1992	10,097	420,532	430,629	35,110		0	23	8,970	158,108
1993	100,233	557,983	658,216	23,320	,	503,630	1	14,430	620,481
1994	23,384	652,264	675,648	19,550	80,965	1,495,169	0	17,700	1,613,384
Lbs. per vehicle produced:									
1991	0.15	4.50	4.65	0.21	0.71	0.72	0.00	0.09	1.74
1992	0.08	3.51	3.60	0.29	0.95	0.00	0.00	0.07	1.32
1993	0.65	3.63	4.28	0.15	0.51	3.27	0.00	0.09	4.03
1994	0.13	3.59	3.72	0.11	0.45	8.22	0.00	0.10	8.87

Plant-Community Profile: Ford Motor Co. Norfolk City VA

#### PLANT ENVIRONMENTAL PROFILE (continued)

#### 1994 TRI Emissions/Releases by Chemical (lbs.)

	Air-Fugitive	Air-Stack	Total	Discharge	Off-Site	Off-Site	Off-Site	Off-Site	Total
Chemical Name	Emissions	Emissions	Releases	to POTW	Energy Recovery	Recycling	Treatment	Disposal	Transfers
METHANOL	1,400	37,000	38,400	0	6,100	8,224	0	0	14,324
N-BUTYL ALCOHOL	350	71,000	71,350	0	10,000	37,130	0	0	47,130
BENZENE	23	52	75	0	0	0	0	0	0
METHYL ETHYL KETONE	4,300	16,000	20,300	0	2,200	23,078	0	0	25,278
1,2,4-TRIMETHYLBENZENE	4,500	28,000	32,500	0	1,700	240,730	0	0	242,430
CUMENE	1,000	1,400	2,400	0	85	12,037	0	0	12,122
ETHYLBENZENE	770	47,000	47,770	0	2,700	130,440	0	0	133,140
ETHYLENE GLYCOL	0	0	0	0	4,800	0	0	0	4,800
METHYL ISOBUTYL KETONE	320	58,000	58,320	0	2,700	361,200	0	0	363,900
TOLUENE	4,300	3,300	7,600	0	680	23,080	0	0	23,760
CYCLOHEXANE	1	2	3	0	0	0	0	0	0
XYLENE (MIXED ISOMERS)	2,700	260,000	262,700	0	38,000	642,200	0	0	680,200
METHYL TERT-BUTYL ETHER	220	510	730	0	0	0	0	0	0
GLYCOL ETHERS	3,500	130,000	133,500	19,000	12,000	17,050	0	0	48,050
MANGANESE COMPOUNDS	0	0	0	260	0	0	0	8,300	8,560
ZINC COMPOUNDS	0	0	0	290	0	0	0	9,400	9,690
TOTAL	23,384	652,264	675,648	19,550	80,965	1,495,169	0	17,700	1,613,384
VOC/NOx Emissions:									
(lbs/year)	VOCs	NO2							
1990	3,028,000	18,000							
1991	2,438,000	14,000							
1992	2,582,000	18,000							
1993	2,922,000	54,000							
1994	4,042,000	52,000							

### Plant-Community Profile: Ford Motor Co. Norfolk City VA

#### **COMMUNITY ENVIRONMENTAL PROFILE**

#### TRI Chemical Releases & Transfers from Sources Within 3 Miles of Auto/LDT Plant (lbs.)

	Facility (w. map #)	Air-Fugitive Emissions	Air-Stack Emissions	Total Releases	Discharge to POTW	Off-Site Transfers	Total Transfers
1	BAUER COMPRESSORS INC.	0	0	0	0	0	0
2	NORSHIPCO & DRYDOCK CORP.	35,000	0	35,000	0	2,750	2,750
4	COLONNAS SHIPYARD INC.	43,000	0	43,000	0	0	0
5	SMITHFIELD PACKING CO. INC.	0	0	0	0	0	0
6	METRO MACHINE CORP.	0	0	0	0	0	0
7	SOUTHLAND IND. INC.	0	0	0	0	0	0
8	NORSHIPCO CORP.	172,750	250	173,000	1,505	24,250	25,755
9	UNITED STATES GYPSUM CO.	0	0	0	0	0	0
10	CHESAPEAKE FERTILIZER CO.	0	2,595	3,600	0	0	0
11	CARGILL INC. DSP DIV.	0	0	0	0	0	0
12	CHESAPEAKE HARDWOOD PRODUCT	6,000	26,000	32,000	5	250	255
	Total	256,750	28,845	286,600	1,510	27,250	28,760

Air Quality Attainment Status (as of 1994)\*

ozone - nonattainment (marginal)

carbon monoxide - attainment or unclassifiable

particulates - unclassifiable lead - unclassifiable

NO2 - cannot be classified or better than national standards

SO2 - attainment

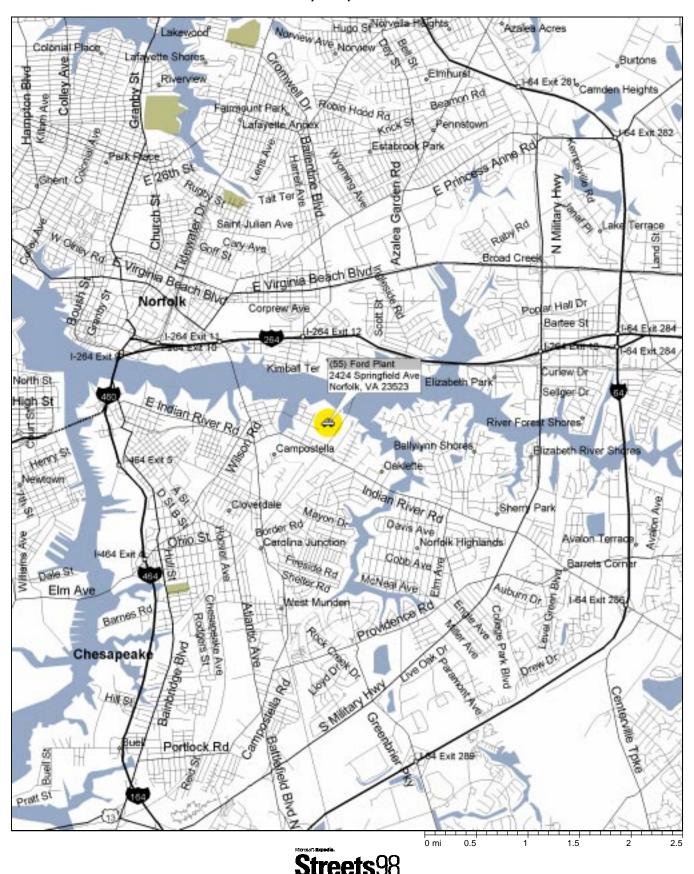
<sup>\*</sup> no changes in designations occurred between 1994 and 1996

### Plant-Community Profile: Ford Motor Co. Norfolk VA

#### COMMUNITY DEMOGRAPHIC AND ECONOMIC CHARACTERISTICS

	Census Block	0-1 Mile	0-3 Miles	1-3 Miles	3-5 Miles	County	State	u.s.
Total Population (1994)	NA	NA	NA	NA	NA	241,426	6,550,826	260,340,990
Total Population (1990)	49	7,669	743,302	735,633	139,677	261,229	6,187,358	248,709,873
% Change 1990-1994	NA	NA	NA	NA	NA	-8	6	5
Total Area (sq. mi.) (1990)	<1	3.1	28.2	25.1	50.2	53.8	39,597.8	3,536,278.1
Population/sq. mi. (land area) (1990)	178	4,321	34,414	37,108	3,560	4,859	156	70
Median Household Income (1994)						NA	37,647	32,264
Median Household Income (1989)						23,563	33,328	30,056
% Change 1979-1989 (constant \$)						12	14	7
% Change 1989-1994 (constant \$)						NA	13	7
Per Capita Personal Income (1993)						17,198	21,653	20,800
Per Capita Personal Income (1989)						14,360	18,768	17,690
% Change 1989-1993 (current \$)						20	15	18
Minority Percentage (1990)	55	73	12	11	43	43	22	20
Pct. of Households Below Poverty Level (1989)	70	42	9	8	18	14	11	20
Pct. Not Completing	53	41	34	33	19	23	24	25
High School (1990)								
Total Employment (1994) (civilian nonfarm)						96,849	3,422,000	131,056,000
Unemployment Rate (1994)						6	5	6
Manufacturing Employment (1993)						12,463	404,065	18,183,381
Mfgr. as % Total Employment (1993)						12	17	19
Manufacturing Employment (1992)						NA	408,000	18,253,000
Production Workers (1992)						NA	283,000	11,654,000
% Change in Mfgr. Employment 1987-1992						NA	-5	-4
Assembly Plant as % Total Mfgr. Workers						14		

### Norfolk, VA, Ford Plant

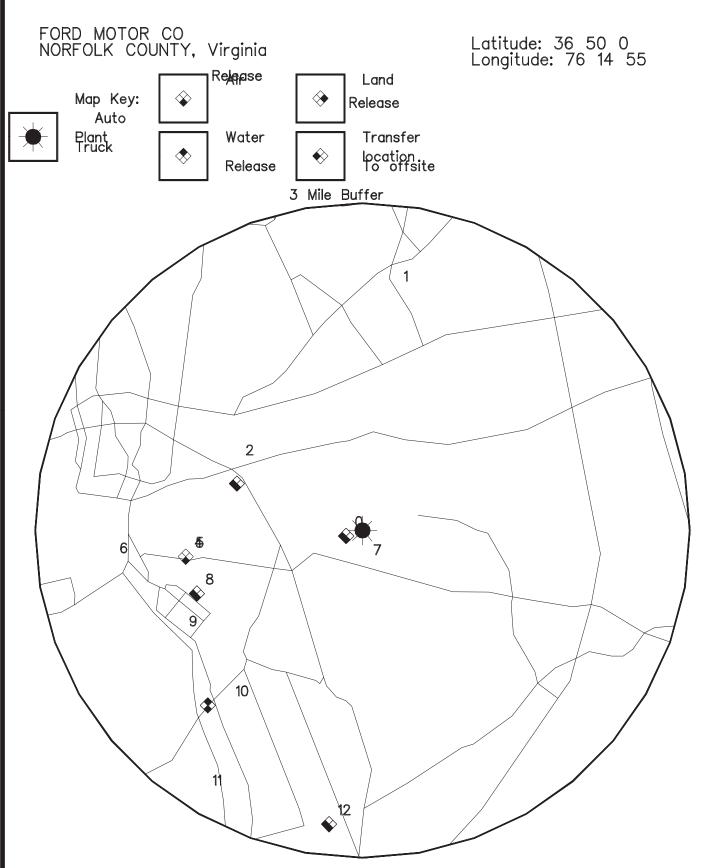


#### FORD MOTOR CO 2424 SPRINGFIELD AVE NORFOLK VA

Tri Number: 23523FRDMT2424S

Map #	SIC Name	Address	City	State
0	3711 FORD MOTOR CO. NORFOLK ASSEMBLY PLANT	2424 SPRINGFIELD AVE.	NORFOLK	VA
1	3563 BAUER COMPRESSORS INC.	1328 AZALEA GARDEN RD.	NORFOLK	VA
2	3731 NORSHIPCO & DRYDOCK CORP.	ROSE & CLAIRBORNE ST.	NORFOLK	VA
4	3731 COLONNAS SHIPYARD INC.	400 E. INDIAN RIVER RD.	NORFOLK	VA
5	2010 SMITHFIELD PACKING CO. INC.	435 EAST INDIAN RIVER RD.	NORFOLK	VA
6	3731 METRO MACHINE CORP.	200 LIGON ST.	NORFOLK	VA
7	3293 SOUTHLAND IND. INC.	2601 INDIAN RIVER RD.	CHESAPEAKE	VA
8	3731 NORSHIPCO CORP.	750 W. BERKLEY AVE.	NORFOLK	VA
9	3275 UNITED STATES GYPSUM CO.	1001 BUCHANAN ST.	NORFOLK	VA
10	2875 CHESAPEAKE FERTILIZER CO.	FOOT OF OHIO ST.	CHESAPEAKE	VA
11	2075 CARGILL INC. DSP DIV.	501 BARNES RD.	CHESAPEAKE	VA
12	2435 CHESAPEAKE HARDWOOD PRODUCTS INC.	201 DEXTER ST. W.	CHESAPEAKE	VA

# AREA WIDE 1994 TRI EMISSION PROFILE



Number without a Symbol denotes no reported emissions over 0.5 pounds per year

Chemical Name	Air Fugiti (Non-Poin Source) Emissions	t (Point Source)	to Surface	On-Site Land Disposal	TOTAL RELEASES	Discharge to POTW	Transfer	TOTAL TRANSFERS
ORD MOTOR CO. NORFOLK A	SSEMBLY PLANT		SIC DESCRIPT	TON: MOTO	OR VEHICLES	& CAR BODIES	S MAP 1	LOCATION NO:
			SIC CODE: 3					
424 SPRINGFIELD AVE. ORFOLK	VA 23523							
ETHANOL	1.4	400 37,00	0	0	38,400	0	14,324	14,324
-BUTYL ALCOHOL	,	350 71,00		0	71,350	0	47,130	47,130
ENZENE		23 5:	2 0	0	75	0	. 0	0
ETHYL ETHYL KETONE	4,:	300 16,00	0 0	0	20,300	0	25,278	25,278
,2,4-TRIMETHYLBENZENE	4,	500 28,00	0 0	0	32,500	0	242,430	
JMENE		000 1,40		0	2,400	0	12,122	12,122
THYLBENZENE	•	770 47,00		0	47,770	0	133,140	133,140
THYLENE GLYCOL		•	0 0	0	0	0	4,800	4,800
ETHYL ISOBUTYL KETONE		320 58,00		0	58,320	0	363,900	363,900
OLUENE	4,:	300 3,30		0	7,600	0	23,760	23,760
YCLOHEXANE			2 0	0	3	0	0	0
LENE (MIXED ISOMERS)		700 260,00		0	262,700	0	680,200	680,200
ETHYL TERT-BUTYL ETHER		220 51		0	730	0	0	0
LYCOL ETHERS	3,	130,00		0	133,500	19,000	29,050	48,050
ANGANESE COMPOUNDS		•	0	0	0	260	8,300	8,560
NC COMPOUNDS		0	0	0	0	290	9,400	9,690
su	BTOTALS 23,	384 652,26	0	0	675,648	19,550	1,593,834	1,613,384
AUER COMPRESSORS INC.			SIC DESCRIPT		AND GAS COM	IPRESSORS	MAP 1	LOCATION NO:
200 707107 070001 00			SIC CODE: 3	563				
328 AZALEA GARDEN RD. ORFOLK	VA 23502							
SU	BTOTALS	0	0	0	0	0	0	0
ORSHIPCO & DRYDOCK CORP			SIC DESCRIPT	-	BUILDING A	ND REPAIRING	G MAP 1	LOCATION NO:
	VA 23504		SIC CODE: 3	731				
OSE & CLAIRBORNE ST. ORFOLK	VA 23304							
ORFOLK		200	2	0	15 000	^	750	750
ORFOLK -BUTYL ALCOHOL	15,0		0 0	0	15,000	0	750	750
ORFOLK			0 0	0	15,000 20,000	0	750 2,000	750 2,000

# 1994 TRI EMISSIONS (LB/YEAR) AT FACILITIES WITHIN THREE MILES OF FORD MOTOR CO TRI NO: 23523FRDMT2424S

Chemical Name	Air Fu (Non- Sour Emiss	ce)	Air Stack (Point Source) Emissions	to Surface	On-Site Land Disposa		TOTAL RELEASES	Discharge to POTW	Transfer	TOTAL TRANSFERS	<b>-</b>
COLONNAS SHIPYARD INC 400 E. INDIAN RIVER R NORFOLK				SIC DESCRIF		HIP	BUILDING A	AND REPAIRIN	G MAP	LOCATION N	): 4
N-BUTYL ALCOHOL METHYL ISOBUTYL KETON XYLENE (MIXED ISOMERS		12,500 8,500 22,000	0 0 0	0	1	0 0 0	12,500 8,500 22,000	0 0 0	0		) ) )
	SUBTOTALS	43,000	0	0		0	43,000	0			)
SMITHFIELD PACKING CO 435 EAST INDIAN RIVER NORFOLK				SIC DESCRIF	-				MAP	LOCATION N	): 5
	SUBTOTALS	0	0	0	1	0	0	0	0		)
METRO MACHINE CORP. 200 LIGON ST. NORFOLK	VA 23523			SIC DESCRIF		HIP	BUILDING A	AND REPAIRIN	G MAP	LOCATION N	): 6
	SUBTOTALS	0	0	0		0	0	0	0		)
SOUTHLAND IND. INC. 2601 INDIAN RIVER RD. CHESAPEAKE	VA 23325			SIC DESCRIF					MAP	LOCATION N	): 7
	SUBTOTALS	0	0	0	1	0	0	0	0		)

# 1994 TRI EMISSIONS (LB/YEAR) AT FACILITIES WITHIN THREE MILES OF FORD MOTOR CO TRI NO: 23523FRDMT2424S

Chemical Name	Air Fugitive (Non-Point Source) Emissions	Air Stack (Point Source) Emissions	to Surface	On-Site Land Disposal	TOTAL RELEASES	Discharge to POTW	Transfer	TOTAL TRANSFERS	
NORSHIPCO CORP.			SIC DESCRIPT	-	BUILDING .	AND REPAIRIN	IG MAP	LOCATION NO:	8
750 W. BERKLEY AVE. NORFOLK	VA 23501 2100	Š	SIC CODE: 3	731					
N-BUTYL ALCOHOL	25,00		0	0	25,000		2,000		
METHYL ISOBUTYL KETON	,		0	0	27,000		1,500		
XYLENE (MIXED ISOMERS	•		0	0	120,000		5,000	•	
CHROMIUM COMPOUNDS	25		0	0	500		750		
COPPER COMPOUNDS	25		0	0	250		15,000	15,750	
ZINC COMPOUNDS	25	0 0	0	0	250	750	0	750	
	SUBTOTALS 172,75	0 250	0	0	173,000	1,505	24,250	25,755	
UNITED STATES GYPSUM	co.		SIC DESCRIPT SIC CODE: 3		UM PRODUCT	S	MAP	LOCATION NO:	Ş
	VA 23523		SIC CODE: 3		UM PRODUCT		MAP		9
1001 BUCHANAN ST. NORFOLK  CHESAPEAKE FERTILIZER	VA 23523 SUBTOTALS	0 0	SIC CODE: 3	275 0 ION: FERT	0		0		
1001 BUCHANAN ST. NORFOLK CHESAPEAKE FERTILIZER FOOT OF OHIO ST. CHESAPEAKE	VA 23523 SUBTOTALS CO. VA 23324	0 0	O SIC DESCRIPT SIC CODE: 2	275 0 ION: FERT 875	O TLIZERS, M	0 IXING ONLY	0 MAP	0 LOCATION NO:	
1001 BUCHANAN ST. NORFOLK  CHESAPEAKE FERTILIZER FOOT OF OHIO ST. CHESAPEAKE SULFURIC ACID	VA 23523 SUBTOTALS CO. VA 23324	0 0	O  SIC DESCRIPT SIC CODE: 2	275 0 ION: FERT 875	0 TLIZERS, M	0 IXING ONLY	0 MAP	0 LOCATION NO:	
LOO1 BUCHANAN ST. NORFOLK  CHESAPEAKE FERTILIZER FOOT OF OHIO ST. CHESAPEAKE  SULFURIC ACID COPPER COMPOUNDS	VA 23523 SUBTOTALS CO. VA 23324	0 0 25 0 250	SIC CODE: 3  0  SIC DESCRIPT SIC CODE: 2	275 0 ION: FERT 875 0 0	O TILIZERS, M 10 500	0 IXING ONLY  0 0	0 MAP 0 0	0 LOCATION NO: 0 0	
LOO1 BUCHANAN ST. NORFOLK  CHESAPEAKE FERTILIZER FOOT OF OHIO ST. CHESAPEAKE SULFURIC ACID COPPER COMPOUNDS LEAD COMPOUNDS	VA 23523 SUBTOTALS CO. VA 23324	0 0 0 0 5 0 250 0 250	SIC CODE: 3  O  SIC DESCRIPT SIC CODE: 2  5 250 250	275 0 ION: FERT 875 0 0	0 TILIZERS, M 10 500 500	0 IXING ONLY  0 0 0 0	0 MAP 0 0 0	O LOCATION NO:  0 0 0 0	
CHESAPEAKE FERTILIZER FOOT OF OHIO ST. CHESAPEAKE SULFURIC ACID COPPER COMPOUNDS LEAD COMPOUNDS	VA 23523 SUBTOTALS CO. VA 23324	0 0 5 0 250 0 250 0 750	SIC CODE: 3  O  SIC DESCRIPT SIC CODE: 2  5 250 250 250	275 0 ION: FERT 875 0 0	0 FILIZERS, M 10 500 500 1,000	O IXING ONLY  0 0 0 0 0	0 MAP 0 0 0 0	LOCATION NO:  0 0 0 0 0	
LOO1 BUCHANAN ST. NORFOLK  CHESAPEAKE FERTILIZER FOOT OF OHIO ST. CHESAPEAKE  SULFURIC ACID COPPER COMPOUNDS	VA 23523 SUBTOTALS CO. VA 23324	0 0 0 0 5 0 250 0 250	SIC CODE: 3  O  SIC DESCRIPT SIC CODE: 2  5 250 250	275 0 ION: FERT 875 0 0	0 TILIZERS, M 10 500 500	O IXING ONLY  0 0 0 0 0	0 MAP 0 0 0	LOCATION NO:  0 0 0 0 0	10

# 1994 TRI EMISSIONS (LB/YEAR) AT FACILITIES WITHIN THREE MILES OF FORD MOTOR CO TRI NO: 23523FRDMT2424S

Chemical Name	(Non- Sou	-Point rce)	Air Stack (Point Source) Emissions	Discharge to Surface Water	On-Site Land Dispos	7	TOTAL RELEASES	Discharge to POTW	Transfer	TOTAL TRANSFERS
CARGILL INC. DSP DIV 501 BARNES RD. CHESAPEAKE	VA 23324	7506		IC DESCRIP IC CODE:	TION: S 2075	OYBE	AN OIL MIL	LS	MAP	LOCATION NO:
	SUBTOTALS	0	0	0		0	0	0	0	0
CHESAPEAKE HARDWOOD		2022		IC DESCRIP	TION: H 2435	ARDWO	OOD VENEER	AND PLYWOO	D MAP	LOCATION NO:
CHESAPEAKE METHANOL	VA 23324	6,000	26,000	0		0	32,000	5	250	255
	SUBTOTALS	6,000	26,000	0		0	32,000	5	250	255

